

Thank you for providing EPA the opportunity to review the draft air quality modeling workplan. The following comments and recommendations are intended to support CDOT and FHWA to support the NEPA document and decision. If there are any questions or further clarifications regarding our comments and recommendations, please do not hesitate to reach out to us.

Comments and Recommendations

1. **Follow-up on Related Work Plan Materials:** In a meeting of the Interagency Consultation group (IAC) on April 4, 2022, a commitment was made to provide additional materials related to decision-making for the latest version of the Air Quality Particulate Matter Modeling Draft Work Plan (Work Plan). These additional materials included a summary of comments received during community outreach efforts and revised figures detailing proposed expansion of the modeling area and areas of special community concern. We appreciate the commitment to provide these additional materials and look forward to reviewing all other relevant supplemental materials related to the Work Plan. We may have additional recommendations based on the review of that material.
2. **MOVES Runs Overview (Page 4, Section 5.1):** The Work Plan states in section 5.1 that, in accordance with EPA's PM hot-spot guidance, "[MOVES] runs to represent different [...] times of day will not be needed," because PM emissions are not sensitive to temperature or humidity variations. We recommend clarifying here or elsewhere how the MOVES modeling will determine emissions for various activity scenarios throughout the typical day. EPA's hot-spot guidance recommends four MOVES runs covering four distinct time periods of the day with different traffic characteristics, all during the most conservative (highest emitting) fuel season. While revised guidance dropped the requirement to complete additional MOVES runs in multiple seasons to determine effect of varying ambient conditions over the typical year on PM emissions, guidance recommends multiple model runs over a typical day are still required to evaluate emissions at times of different activity levels.
3. **Source Parameters and Receptor Layout (Page 9-10, Sections 6.1 and 6.2):** The work plan states that source input assumptions and the source and receptor configurations for AERMOD will be provided to CDOT and the partners for review prior to commencing the air quality modeling. We support this approach and want to highlight the importance of sharing this information with the partners to ensure that the air quality modeling is configured in a manner consistent with EPA's air quality modeling and NEPA guidelines.
4. **Meteorological Model Version (Page 11, Section 6.3):** The work plan states that AERMET version 19191 will be used for the project. It is not clear why an older version of AERMET is being selected and used when the current version of AERMET is version 21112. We recommend using the current version of AERMET (v21112) to align with EPA's Guideline

on Air Quality Models¹ and to have the most technically defensible air quality modeling platform. If the current AERMET version cannot be used for this project, we recommend explaining why an older AERMET version will be used and the implications or potential uncertainty in using an older AERMET version in the work plan.

5. **Meteorological Model Configuration (Page 11, Section 6.3):** The work plan states that the ADJ_U* option in AERMET will be enabled for this project. This option adjusts the surface friction velocity to improve model performance for sources where peak impacts are likely to occur during low-wind speeds and stable conditions.^{2,3} It is possible that the model could potentially overpredict impacts in cases that do not align with the intended use. In addition, the EPA has determined that the ADJ_U* option should not be used in AERMET in combination with use of measured turbulence data because of the observed tendency for model underpredictions resulting from the combined influences of the ADJ_U* and the turbulence parameters within the current model formulation. Based on the information provided in the work plan, it is not clear whether the configuration of the meteorological model aligns with EPA's air quality modeling guidelines. We recommend adding a justification to demonstrate that the project's conditions meet the intended use of the ADJ_U* option. Otherwise, we do not recommend using the ADJ_U* option in AERMET for this project.
6. **AERMOD Particle Deposition:** We have found that some projects utilize the particle deposition or depletion options in AERMOD to determine the impacts from particulate matter. However, we do not realize the use of these options until we review the modeling files, and then we frequently find that these options are not always used properly. We recommend explaining whether particle deposition or depletion options will be used in AERMOD and providing the appropriate information to support the use of these options in the work plan. Please refer to section 7.2.1.3 of EPA's Guideline on Air Quality Models⁴ for more information about the particle deposition or depletion options in AERMOD and the information needed to support these options.
7. **Air Quality Modeling Input and Output Files:** The work plan states that modeling input and output files, spreadsheets with model inputs, input data, and post-processing files will be delivered electronically to CDOT. However, it is not clear from the work plan whether the partners will have the opportunity to review these files. We recommend providing all the air quality modeling files to the partners with the draft air quality modeling technical air quality report to assist in the review.

¹ *Guideline on Air Quality Models* ("Appendix W" to 40 CFR Part 51), January 2017:
https://www.epa.gov/sites/default/files/2020-09/documents/appw_17.pdf

² *Guideline on Air Quality Models* ("Appendix W" to 40 CFR Part 51), January 2017:
https://www.epa.gov/sites/default/files/2020-09/documents/appw_17.pdf

³ *User's Guide for the AERMOD Meteorological Preprocessor (AERMET)*, April 2021:
https://gaftp.epa.gov/Air/aqmg/SCRAM/models/met/aermet/aermet_userguide.pdf

⁴ *Guideline on Air Quality Models* ("Appendix W" to 40 CFR Part 51), January 2017:
https://www.epa.gov/sites/default/files/2020-09/documents/appw_17.pdf